

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended)

A method of draining and venting the permeate gases from a subsea flexible tubular pipe for transporting hydrocarbons, wherein the subsea flexible tubular pipe comprises:

at least one internal pressure sheath suitable for transporting the hydrocarbons, whereby permeate gases contained in the hydrocarbons are liable to diffuse through the wall of the internal pressure sheath

an external sheath around the internal sheath; and

at least one reinforcing ply located in an annular region lying between the external sheath and the internal pressure sheath, the annular region having, along the reinforcing plies, flow paths along which the permeate gases can flow toward a vent proximate to the sea surface for venting the permeate gases;

the method comprising:

injecting an entrainment gas under pressure at a subsea location near the seabed into the annular region and along the flow paths to force the permeate gases to flow along the flow paths toward the vent; and

operating the vent for venting the permeate gases out of the annular region and toward the outside of the subsea flexible tubular pipe.

Claim 2 (Previously Presented)

The method of draining and venting permeate gases as claimed in claim 1, wherein the entrainment gas is injected into a plurality of injection regions spaced apart longitudinally in the annular region of the subsea flexible tubular pipe.

Claim 3 (Previously Presented)

The method of draining and venting permeate gases as claimed in claim 1, wherein the entrainment gas is injected at one of the ends of the subsea flexible tubular pipe.

Claim 4 (Previously Presented)

The method of draining and venting permeate gases as claimed in claim 1, wherein a nitrogen-containing gas is injected.

Claim 5 (Previously Presented)

The method of draining and venting permeate gases as claimed in claim 1, further comprising creating the flow by sucking the permeate gases out from at least one suction region inside the annular region to force the permeate gases to flow.

Claim 6 (Currently Amended)

A subsea flexible tubular pipe for transporting hydrocarbons, comprising:
at least one internal pressure sheath suitable for conveying the hydrocarbons, the sheath being such that permeate gases contained in the hydrocarbons are liable to diffuse through the internal pressure sheath;
an external sheath around the internal sheath and defining an annular region between the sheaths; at least one reinforcing ply located in the annular region lying between the external sheath and the internal pressure sheath, the annular region having, along the reinforcing plies, flow paths along which the permeate gases can flow and
a vent proximate to the sea surface toward which the permeate gases flow;
at least one supply line emerging in the annular region at a subsea location near the seabed for supplying pressurized entrainment gas in order to force the permeate gases in the annular region to flow along the flow paths toward the vent and the vent is suitable for venting the permeate gases out of the annular region and toward the outside of the subsea flexible tubular pipe.

Claim 7 (Previously Presented)

The subsea flexible tubular pipe as claimed in claim 6, wherein the supply line lying in the annular region includes drilled injection holes spaced apart so as to form a plurality of injection regions spaced longitudinally along the subsea flexible tubular pipe.

Claim 8 (Previously Presented)

The subsea flexible tubular pipe as claimed in claim 6; further comprising a pressurized-nitrogen supply connected to the supply line for forcing the permeate gases to flow.

Claim 9 (Previously Presented)

The subsea flexible tubular pipe as claimed in claim 6, further comprising a device operable for forcing the permeate gases to diffuse include a suction pump for sucking the permeate gases into the flow paths in at least one suction region of the annular region.

Claim 10 (Previously Presented)

The subsea flexible tubular pipe as claimed in claim 6, wherein the vent comprises differential valves operable for venting the gases by the pressure difference between the annular region and the outside.